

# DOCKETED

IN THE UNITED STATES DISTRICT COURT FOR THE  
SOUTHERN DISTRICT OF NEW YORK

MIDWAY MANUFACTURING COMPANY: Deposition of  
vs. : Gordon Richard Green  
THE MAGNAVOX COMPANY :  
and :  
SANDERS ASSOCIATES, INC. :  
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IN THE UNITED STATES DISTRICT COURT FOR THE  
NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

THE MAGNAVOX COMPANY, et al : Consolidated Actions  
vs. : Chicago, Illinois 74 C 1030✓  
74 C 2510✓  
BALLY MANUFACTURING : 75 C 3153  
CORPORATION, et al : 75 C 3933  
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Deposition taken pursuant to  
subpoena and notice at the Sanders Associates, Inc.,  
Headquarters, Spit Brook Road, Nashua, New Hampshire;  
Monday, April 26, 1976; commencing at two o'clock in the  
afternoon.

FILED

OCT - 8 1976

ERNEST W. NOLIN & ASSOCIATES

General Stenographic Reporters  
369 ELGIN AVE., MANCHESTER, N. H. 03104  
TELEPHONE: 623-6906

H. STUART CUMMING, CLERK  
UNITED STATES DISTRICT COURT

ORIGINAL

A. Names of persons present:

Q. Name of witness, For Hideway Manufacturing Company  
Bally Manufacturing Corporation  
A. Hideway, Inc., Humpback and Empire:

Q. Who will serve as counsel Donald L. Welsh, Esq., 135 South  
A. LaSalle Street, Chicago, Illinois

A. You, Mr. Welsh?

For Atari, Inc.:

Q. What was that?

A. Solberg, Case Inari & Herbert, by Edward S. Wright,  
Esq., 160 Sansome Street,

Q. Did you receive a dep<sup>l</sup>15th Floor, San Francisco,  
California.

A. Yes, I did.

For Sanders Associates, Inc.

Q. What degree did you receive and Magnavox Company:

A. B.S., University of Illinois, Theodore W. Anderson, Esq.,  
77 West Washington Street,

Q. When did you receive Chicago, Illinois.

A. June, 1928.

For Sanders Associates:

Q. Have you had any for Louis Etlinger, Esq., and me?  
Richard I. Seligman, Esq.,

A. No, I have not. Daniel Webster Highway, South,  
Nashua, New Hampshire.

Q. Are you employed now?

Stenotype Reporter:

A. Yes, I am.

Ronald J. Hayward

Q. By General Electric Company.

A. Yes, I am. GORDON RICHARD GREEN

called as a witness, being first duly sworn, was examined  
and testified as follows:

Q. (Interrogatories by Mr. Welsh.)

Q. Would you state your full name for the record, please?

- A. Gordon Richard Green. particular department or
- Q. Where do you live, Mr. Green?
- A. Hudson, New Hampshire department, but I am doing
- Q. Do you have a formal education after high school?
- A. Yes. Department are you assigned to?
- Q. What was that? - sure of the name, it is something
- A. College. or Case Institute of Technology. It used
- Q. Did you receive a degree?lopment, but I am not sure
- A. Yes. the formal name was something like that.
- Q. What degree did you receive? ned to that group?
- A. BSEE. years ago January. now, Computer division
- Q. When did you receive that? with that group?
- A. June, '51. software design, hardware consulting and
- Q. Have you had any formal education since that time?
- A. No. you worked with any particular computers during
- Q. Are you employed now?
- A. Yes. we worked with the P. RISC and I have worked
- Q. By Sanders? 80 microprocessor and we have a
- A. Yes. known system for that, the Intelled, it is
- Q. And in what capacity? operation and it is based on
- A. As an engineer. As a senior engineer. we used the
- Q. How long have you held that position?
- A. Since February, '63. the same person during that

- Q. Do you now work in a particular department or division?
- A. I am assigned to one department, but I am doing work for other groups as well. Mainly, but originally
- Q. What department are you assigned to? Is it Radar.
- A. I am not really sure of the name, it is something like radar - it is the radar group or - it used to be advanced radar development, but I am not sure of the formal name now. with the radar group
- Q. How long have you been assigned to that group?
- A. Three years ago January. was, Corporate Advanced
- Q. What have been your duties with that group?
- A. Digital hardware design, hardware consulting and software, computer simulations until January, '73.
- Q. Have you worked with any particular computers during that period? Mainly implementation of experiments,
- A. I have worked with the PDP-10 and I have worked with the 8080 microprocessor and we have a development system for that, the Intellic, it is produced by Intel Corporation and it is based on their 8080 microprocessor chip. I have used the 370 on rare occasions. - the TAAR System.
- Q. Have you reported to the same person during that

- A. same period? and Area Alerting Radar.
- A. No. who work with computer during that period?
- Q. To whom have you reported?
- A. Well, there is no person initially, but originally it was Alistair Matheson and now it is E. Hamer.
- Q. Were they successive heads of that group?
- A. Yes. *THE WITNESS: Yes, I did.*
- Q. For what group or department did you work prior
- A. to the time you started with the radar group three years ago January? and Hamer. And we also
- A. I worked for, I guess it was, Corporate Advanced Development under Martin Richmond. or 590 or
- Q. During what period did you hold that position?
- A. From about mid-February, '64, until January, '73.
- Q. What were your duties in that group?
- A. Hardware - primarily implementation of experiments, reduction to practice of various ideas, some of which patents were applied for, and computer, of simulation of some of the experiments to extend it to larger scale. I was also loaned to the
- A. other department that I later am in now for some hardware development in the FAAR System. *the* there
- Q. What was the FAAR System? *with the MIP-16. It*

1/2/76

A. It is a Forward Area Alerting Radar.

Q. Did you work with computers during that period?

A. MR. ANDERSON: I object; by

A. that period, you mean from mid-February, '64,

A. to January of '73? February of '64 until January

A. '73. MR. WELSH: Yes.

A. I was located in the THE WITNESS: Yes, I did.

Q. What computers? There was one period of about

A. Time-sharing service called Telcomp which was another  
operated by Bolt Beranek and Newman. And we also  
used AVCO's computering services. I forget the  
number of their original model, 72 or 590 or  
something of this sort, which they later replaced  
with an IBM 360 Model No. 75 and it was to send

5/28/76 Batch ~~match~~ jobs over there.

Q. Computer room at camp MR. ANDERSON: That is AVCO?

5/28/76 THE WITNESS: Yes. That was, prior to Sanders acquiring the PDP-10. Then, of course, the PDP-10.

Q. Any others? 7th wing?

A. Not that I actually worked on as part of the job.

That is not quite true, just before leaving there I did have a brief encounter with the MIP-16. It

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is a minicomputer that Sanders makes.

Q. Now, during that same period, were you located in one facility or different facilities?

A. Which period? months when you were in the north

Q. The period of mid-February of '64 until January,

A. '73.

A. I was located in the Bedford area; that was my primary office. There was one period of about

A. six months where I was on temporary duty to another

Q. group that was at that time located in this

A. building. Actually the north wing of this building.

Q. Did the location in this building have any

Q. particular name or designation other than north wing? it during that period?

A. Not that I know of earlier referred to and there was

Q. Computer room or computer sciences division?

MR. ANDERSON: Well, I object,

the witness said he didn't know and you are trying

~~lead~~ to ~~lead~~ him. When the UNIVAC was acquired at

Q. Just the north wing?

A. It was a room in the north wing, the second floor.

Q. Well, no, the ground floor, I guess. It has a

basement and a ground floor. MR. ANDERSON: Well, I object,

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3 Q. Were you located in the Bedford area during that -  
as your primary office - during that entire period  
of mid-February, '64, until January of '73, except  
for this six months when you were in the north  
wing here? question, if you can.

A. Yes. ~~THE WITNESS:~~ I am not quite

Q. Was the PDP-10 which you worked on at the Bedford  
location? for a clarification on it.

A. No. the PDP-1 a computer manufactured by someone?

Q. Where was that? uipment Corporation.

A. It is located in the basement of the north wing of  
this building.

Q. Were there any computers located in the Bedford  
facility during that period? ~~the witness~~.

A. The MIP-16 that I earlier referred to and there was  
a PDP-1, I believe at one point there was an IBM  
IBM, a small IBM machine; If don't remember the you  
model. over the question.

Q. Were you there when the PDP-1 was acquired at  
Bedford? I will instruct you not

A. Yes. ~~But my objections are so that the~~

Q. What is the PDP-1 computer? ~~the question and the~~  
~~answer and decide with~~ MR. ANDERSON: Well, I object,

the question is vague and indefinite. You mean who made it or was it commercial or was it made of methyl or how big was it?

assume that it is a machine, so I would  
answer the question, if you can.

Q. Was there a CRT display? THE WITNESS: I am not quite sure I understand the question. I was just about to ask you for a clarification on it.

Q. Was the PDP-1 a computer manufactured by someone?

A. Yes, Digital Equipment Corporation.

Q. Was it a standard commercial computer of that company?

MR. ANDERSON: I object, lack of a foundation, leading the witness.

precise question. MR. WELSH: You may answer the question. If Mr. Anderson makes an objection from time to time, that is for the record and you may answer the question.

MR. ANDERSON: If I believe you should not answer, I will instruct you not to answer; but my objections are so that the Court can someday look at the question and the answer and decide whether it was a proper one and

can be admitted.

Q. As you recall approx. THE WITNESS: I have no way of knowing other than I saw a machine, so I would assume that it is a standard product. I have seen no other now from whom it was obtained?

Q. Was there a CRT display associated with that PDP-1? did you hear?

A. Yes, there was. Is that might have been B. B & M.

Q. What was the model or designation of that display?

MR. ANDERSON: If the witness

A. knows, did.

Q. And what did you use MR. WELSH: Yes.

A. Out of my own service. THE WITNESS: I don't recall the model number. It was referred to as a precision display.

Q. Is the name Type 30 display familiar to you? one time trying to put up with MR. ANDERSON: I object,

*objection sustained* you are leading the witness. the Digital Equipment

Corporation User Group. THE WITNESS: I don't recall the model. re that came with the machine.

Q. When was the PDP-1 acquired at the Bedford facility?

primarily as a learn. MR. ANDERSON: If you know.

or less on your own THE WITNESS: I don't recall

*bedford bldg. 100*

A. the date. I can't tie it to anything.

Q. Do you recall approximately when it was received?

A. I can only guess that it might have been the late sixties.

Q. Do you know from whom it was obtained? ~~object~~, you

A. I have no direct knowledge, I may have heard.

Q. What did you hear?

A. My recollection is that it might have been B, B&N.

Q. Did you have occasion to use the PDP-1 computer at

Q. Bedford? ~~that~~ ~~did~~ ~~you~~ ~~have~~ ~~occasion~~ ~~with~~ ~~the~~ ~~PDP-1~~ ~~computer~~

A. Yes, I did. ~~there~~ ~~was~~ ~~an~~ ~~extension~~ ~~service~~, ~~there~~ ~~was~~

Q. And what did you use it for? ~~you~~ ~~didn't~~ ~~use~~ ~~it~~

A. Out of my own curiosity during lunch hours and the evenings. ~~that~~ ~~I~~ ~~can~~ ~~recall~~ ~~at~~ ~~this~~ ~~time~~.

Q. How did you use it? ~~at~~ ~~the~~ ~~floating~~ ~~point~~ ~~package~~

A. Primarily as a learning tool. I did spend some time trying to put up the floating point package

*distributed* ~~displayed~~ by Decus. It is the Digital Equipment

*AFI 5/28/76* Corporation User Group. And I modified some of

A. the software that came with the machine. ~~haven't~~

Q. You say you used it during lunch hours and evenings primarily as a learning tool, was that then more or less on your own time? ~~at~~ ~~no~~

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- A. Yes.
- Q. You were using other computers to the extent that you needed them in your regular work, is that correct?
- Q. After it arrived did you begin to use it?
- MR. ANDERSON: I object, you are leading the witness. Worse than that, you are testifying.
- THE WITNESS: I use them as stated earlier.
- Q. What software did come with the PDP-1 machine?
- D YRG 5/28/76
- A. Let's see, there was an assembler ~~decal~~, there was a ~~YRG RYG 5/28/76~~ linking loader; I think there might have been parts of the floating point package, those are the only ones that I can recall at this time.
- Q. Will you describe what the floating point package was?
- A. It was a collection of routines to permit the machine to perform floating point arithmetic.
- Q. Did any other software come with the PDP-1?
- A. There was other software in the room; I don't know its origin; I can only assume that it came with the PDP-1. I don't recall its origin at this time. I don't recall what it was.

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Q. Did you start to use the PDP-1 shortly after it arrived at Bedford?

A. No.

Q. How soon after it arrived did you begin to use it?

A. I am not sure of the time period, it was not until it was moved to the second floor of Building 1.

Q. That is Building 1 at Bedford?

A. Yes.

Q. Are you familiar with the term Space War?

A. Yes.

Q. When did you first become familiar with Space War?

MR. ANDERSON: I object, with the witness to my objection, that he will be asked to repeat his answer to this question.

MR. WELSH: Yes.

Q. THE WITNESS: After the machine was moved to the second floor of Building 1.

Q. What did Space War mean when you first became familiar with it?

MR. ANDERSON: Well, I object to the witness to my objection, that he will be asked to repeat his answer to this question, what did it mean to whom, when?

MR. WELSH: To the witness.

Q. I asked when, when he first became familiar with

A. the term, are that I really understand it.

Q. How did you first hear THE WITNESS: It was a program that was run on the PDP-1.

Q. Was it a demonstration program? MR. ANDERSON: I object to the question as lacking a foundation. What do you mean by a demonstration program? I also object to the question as grossly leading. characteristics of the program.

THE WITNESS: I am afraid I don't understand the phrase demonstration program.

Q. What type of a program was it? MR. ANDERSON: I object to the question as ambiguous and vague. What do you mean by what type of a program? He said it was a program to be run on the PDP-1.

Q. Do you understand that question? MR. ANDERSON: I object to the question as lacking a foundation.

Q. Well, what was the program to be used for? MR. ANDERSON: I object to that, by whom? What do you mean to be used for? Do you mean did someone tell him what it was to be used for? There is no foundation.

Q. Do you understand that question? time that the

- A. I am not sure that I really understand it.
- Q. How did you first become familiar with the term by Space War?
- A. Someone, I don't recall who, told me about having a - that they had a Space War program with the PDP-1.
- Q. What did he tell you about it? I mean with the
- A. He told me the general characteristics of the program. I don't know.
- Q. What were those?
- A. The fact that it depicted a couple of space ships (I don't know what they were) on a CRT and the ships were operated by controls from the front panel of the computer and it had acceleration and turning and firing controls.
- Q. Was Space War a program for a game? MR. ANDERSON: I object to the question as leading, lacking a foundation.
- THE WITNESS: It certainly, I would think, could be considered as such.
- Q. Did you ever observe the game of Space War being played on the CRT at the PDP-1 at Bedford?
- A. Yes.
- Q. When was that in relation to the time that the

PDP-1 was moved to the second floor of Building 1?

A. I don't recall precisely, but probably reasonably shortly thereafter, were some options that could be

Q. Were you informed as to where the program came all from? motions of the space switches, but you had

A. No, I was not. the sun was there or not, whether

Q. Do you know whether the program came with the computer from whatever source it was acquired?

A. No, I don't know.

Q. Did each player have a set of switches?

(Whereupon, a recess  
Mr. ANDREWS: I object only  
was taken.)

to the point of what do you mean by had a?

Q. Referring to the Space War game as you first observed it, could you describe in more detail set than you have already what actually happened in starting with what the player or players observed at the beginning of the game and what they did to play the game? controlled the other spacecraft.

A. I don't really recall what you see at the beginning of the game. The screen depicts a sun, a background of stars and two spacecraft, and the spacecraft are controlled from the - one of the set of

A. switches on the front panel. As I recall, you could

control the acceleration, turning left or right and firing of, I believe they called them torpedoes. And I believe there were some options that could be selected by the sense switches. I don't recall all the functions of the sense switches, but you had options of whether the sun was there or not, whether the stars were there or not, whether it was a killer sun or not and I think there was one that controlled the turning mode.

Q. Did each player have a set of switches?

MR. ANDERSON: I object only

to the point of what do you mean by had a? What was

A. He said the switches were on a console.

A. I am not sure that I THE WITNESS: There was a set of switches normally used for entering data in the PDP-1 and the four left-most switches controlled one spacecraft and the four right-most, I think it was four, controlled the other spacecraft.

Q. Were the four switches for controlling each space ship used to control the functions that you stated of acceleration, turning left and right

and firing torpedoes?

A. Yes.

Q. Did anything happen if a player did not manipulate switches for his space ship?

MR. ANDERSON: I object, it lacks a time frame or a foundation. You mean during operations, suddenly he stopped? He said he didn't recall what it looked like at the beginning. That has been his testimony.

THE WITNESS: If you are in the killer sun mode, the force of gravity would eventually draw the ship into the sun and destroy it.

Q. What happened when a ship was destroyed? What was the appearance on the screen?

A. I am not sure that I recall the details. It gave you the impression of an explosion, the ship disappeared. I don't recall how they conveyed that impression.

Q. You referred to the term "killer sun" and I believe stated it was an option of whether you could have a killer sun or not; is that correct?

A. Yes.

Q. What was the difference between the killer sun and the nonkiller sun?

*Under seal of secrecy*

- A. I am not sure that I recall. Killer sun obviously was if ~~it~~ fell into it, you were destroyed; and the nonkiller sun, I don't recall whether the sun was there or not.
- Q. Was gravity always present when the sun was present?
- A. I can't recall for sure. The space ship were moving.
- Q. What happened when a player operated the switch controlling the firing of torpedoes?
- A. The spot would emerge from what appeared to be the leading edge of the spacecraft and would proceed out. There would be a series of them that would proceed out for approximately two or three inches from the spacecraft location and then they would seem to pop.
- Q. Did they pop upon contact with the other player's space ship? or torpedoes appear to bounce off the
- A. They would pop without contact. They had a certain range and they popped after that range.
- Q. Did any torpedoes ever appear to strike the other player's space ship?
- A. Yes.
- Q. What happened when that occurred?
- A. It appeared that his space ship blew up.

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Q. In a manner similar to that when the space ship was drawn into the killer sun?

A. I am not sure if the manners were similar or not.

Q. But it did appear to blow up?

A. It gave the impression of coming apart.

Q. Did anything happen if his space ship were moving toward the edge of the screen of the cathode ray tube and continued to move in that direction?

A. The craft would reappear at the opposite edge of the screen as though left and right were connected together and top and bottom were connected together. What happened then?

Q. Did the torpedoes appear to do that also?

A. Yes, at Bedford?

Q. Was there any option available in which the

Q. space ship or torpedoes appear to bounce off the

A. edge of the screen rather than appear on the

Q. opposite side? Of time did you play the game?

MR. ANDERSON: I object to your leading the witness.

THE WITNESS: I don't know of any such option. The total span of time or

Q. Have you ever seen or played any version of

Space War, in which there was such an option?

A. No.

Q. How long did a game of Space War last? That is, the one that you were first familiar with off and

A. Do you mean the time period in the room?

Q. Well, did it last for a limited time period or did

A. it last until a space ship was destroyed? Or what determined the end of the game?

A. Well, basically I guess it would be when a ship and

A. was destroyed. You could run into an odd situation where both would run out of torpedoes and I don't recall what happened then. or - - - - -

Q. Did you actually play this Space War game on the PDP-1 at Bedford? all and other times maybe two

A. Yes, I did. On hours. I used to play for hours and

Q. Did you play it more than once? and off during

A. Yes. whole period it was there?

Q. Over what period of time did you play the game?

MR. ANDERSON: I object to that you are leading the question as I have when you have asked similar leading questions in the past, do you mean the length of a single incident or the total span of time one which he might have only played it twice five years

apart or what? MR. WELSH: The total span of time.

THE WITNESS: I have no specific recollection. THE WITNESS: Probably off and on over the period that it was in that room.

Q. Approximately how long was that period?

A. I don't recall the dates that it moved in or out. It was probably several years.

Q. Approximately how frequently did you play the game?

A. By that, do you mean how many times a week, that sort of thing, or how many times total? sons that

Q. No, how many times a week or - - - there at

A. It was highly variable dependent on the weeks.

A. Some weeks not at all and other times maybe two or three noon hours. people playing the game?

Q. But you continued to play it on and off during the whole period it was there? program?

A. A paper tape. MR. ANDERSON: I object, you are leading the witness. There is no foundation for the question. Mr. Welsh, you persist in leading this witness and I think that is grossly improper. This witness has not in any way been hostile to you or to your client's cause and I think you should

respect the Rules of Civil Procedure and act in accordance therewith.

THE WITNESS: I have no

specific recollection, but it is entirely possible.

Q. Did you play the game with other persons?

A. Yes.

Q. How many other persons would you estimate that you played the game with?

A. I can't recall specifically, but probably a few, maybe five.

Q. Did other people play the game than persons that you played with while the PDP-1 was there at Bedford?

A. I don't have any knowledge.

Q. Did you observe other people playing the game?

A. Only the ones that I had played with.

Q. In what form was this Space War program?

A. A paper tape.

Q. Did you have a copy of the program?

A. I copied the tape that was there.

Q. When did you do that?

A. I don't recall the date.

Q. Do you still have that tape that you copied?

- A. No, that was sent to Mr. Seligman.
- Q. I hand you what has previously been marked in depositions here as Exhibit 69 and ask if that is the tape which you gave Mr. Seligman?
- A. It does appear to be.
- Q. Is there more than one tape there? you said the
- A. There does seem to be a second small one.
- Q. What is that tape? that I copied the tape, yes.
- A. That tape changes the constants of the program.
- Q. What constants did you refer to?
- A. Some of the constants that determined the
- Q. parameters. tapes to it.
- Q. What parameters are you referring to?
- A. I am not sure specifically which ones are on the tape, but they would be ones such as acceleration, turning rates, torpedo velocities, number of
- Q. torpedoes. that Exhibit 69 represents the proper
- Q. When did you make this copy? small tape which
- A. I don't recall the date, but there is a date on the tape. Which you prepared separately? that is
- Q. What is the date on the tape?
- A. The 9th of February, 1968. MR. ANDERSON: I object, you are implying the witness. MR. ANDERSON: That is the

date that is punched in? ~~say to that effect, you are~~  
testifying for him. THE WITNESS: Yes, that is  
punched into the leader of the tape in visible ~~the~~

~~form.~~ ~~and program as I originally copied it from~~

- Q. Do you know what that date is or what it is intended  
to signify? Is that the date when you made the  
copy?

MR. ANDERSON: Well, the

A. That is the date that I copied the tape, yes, it,

- Q. Did you ever have anything to do with changing  
the Space War program?

A. The basic program, you mean? The main tape is a

Q. Or adding things to it. ~~in the system.~~ There is

A. Not other than the constants. ~~which modified~~

Q. And what did you have to do in that regard?

A. I just modified them to liven up the game a little  
bit. ~~the last time I lived. The smaller tape probably~~

- Q. Is it correct that Exhibit 69 represents the program  
as you copied it and then the small tape which  
states, "Load: Then this tape to change constants,"  
was one which you prepared separately? ~~in another tape which was~~  
That is  
separate from Exhibit 69?

MR. ANDERSON: I object, you  
are leading the witness.

There has been no testimony to that effect, you are testifying for him. Exhibit 69, 69-1 was

THE WITNESS: This tape is the original programs as I originally copied it from whatever tape was with the system, of which now has

- Q. That is Exhibit 69? MR. ANDERSON: Well, the anyone thicker part of Exhibit 69. As I understand it, the tape marked RIM are part of Exhibit 69.

A. Are what you think she THE WITNESS: They are all marked that. This portion of the main tape is a copy of the tape that was on the system. There is an extra section on the tail end which modified some of the constants. If that is the 8 1/2 by 11

- Q. Those are the last four or five folds?

A. Yes, the last four folds. The smaller tape probably does similar things to this with maybe a different set of constants, but its function is the same as the last four folds of the main tape.

MR. WELSH: I would like to ask the reporter to mark the smaller tape which was a part of the total Exhibit 69 as 69-1. probably was about the time that I copied the tape, though.

(Whereupon, Sanders'

Exhibit No. 69-1 was

marked for identification.)

Q. Other than the tapes which were originally marked as Exhibit 69 and the smaller one of which now has been marked as Exhibit 69-1, did you furnish any other documents or things to Mr. Etlinger or anyone from his office?

A. Yes, I furnished an 8 1/2 by 11 sheet of material.

Q. And what was that sheet?

A. That was an identification of the - some of the constants that I previously referred to.

Q. I hand you now what has been marked previously as Exhibit 65 and ask if that is the 8 1/2 by 11 sheet to which you just referred to?

A. Yes, this is the sheet.

Q. Where did you obtain that sheet?

A. I wrote it out.

Q. That is your handwriting on there?

A. Yes.

Q. When did you do that?

A. I have no recollection of the date, it probably was about the time that I copied the tape, though.

Q. That is Exhibit 69? being knowledgeable of Space War.

A. No, 65. I say who?

Q. I mean at the time that you copied the tape which is Exhibit 69? witness has already merely speculated

A. Yes. he presumes that if Mr. Seligman said anything,

Q. How did you happen to furnish Mr. Seligman or someone from Mr. Etlinger's office Exhibits 69 et al. and 65? etc.

A. Mr. Seligman called me and asked me for all materials that I had on Space War, if I had any.

Q. When did he call you? a search for documents

A. I don't recall the date, approximately two to three months ago.

Q. Did he tell you why he desired such materials?

A. Only that Sanders was required to produce it in conjunction with their lawsuit, documents other

Q. Did he say anything more about the lawsuit; what it was about or anything else?

A. No, he didn't.

Q. Did he tell you why he selected you to call in this regard? in a cathode ray tube with a computer

A. I don't recall precisely, I assume, if he did mention it, he said somebody had given him my name as

A. someone possibly being knowledgeable of Space War.

Q. He didn't say who? ~~space war~~ played on any display with any computer here. MR. ANDERSON: I object to the question. The witness has already merely speculated that he presumes that if Mr. Seligman said anything, he said that someone gave him the name; now, I don't think that is any foundation for your question whatsoever.

Q. What other games have? THE WITNESS: I have no

A. recollection of who different people call it.

Q. Did he ask you to make a search for documents relating to Space War?

A. Yes, he did. ~~seen any others.~~

Q. And did you make such a search? Space War on the

A. Yes, I did. PDP-1 at Bedford, had you ever seen an

Q. Did you find in that search any documents other than these we have been discussing, Exhibit 65 the and Exhibit 69? ~~an attorney testified that he has~~

A. No, I did not. ~~other game~~ other than the ones he

Q. Have you ever seen or observed Space War being played on a cathode ray tube with a computer ~~here~~ subsequent to the time when you saw the game on the PDP-1 at Bedford? MR. ANDERSON: Well, I may

- A. No, I understand the question, I will let the
- Q. Have you ever seen Space War played on any display  
with any computer here at the south of Nashua he  
facility of Sanders? any game on a CRT in conjunction
- A. No, I have not.
- Q. Have you ever seen any game other than Space War  
played on a cathode ray tube?
- A. Yes, was probably early this spring or winter.
- Q. What other games have you seen?
- A. Pong or ping pong, different people call it a lot  
different things. Any other game played on a .
- Q. Any other games?
- A. I have not seen any others. that one. I have seen
- Q. Prior to the time you first saw Space War on the  
CRT on the PDP-1 at Bedford, had you ever seen any  
game on a CRT associated with a computer?
- So, other than seeing MR. ANDERSON: I object to the  
question. He has already testified that he has  
never seen any other games other than the ones he  
referred to. MR?

MR. WELSH: Earlier we were  
referring to subsequent ones other than at, Bedford.

MR. ANDERSON: Well, I may

A. have misunderstood the question, I will let the witness answer.

Well, have you seen THE WITNESS: Prior to the PDP-1 I had not seen any game on a CRT in conjunction with a computer.

Q. When did you first see the pong or the ping pong

game? as that simply a matter of the appearance on

A. That was probably early this spring or winter.

January, February.

Q. Other than the pong or ping pong and the Space War

game, have you seen any other game played on a cathode ray tube? games such as Space Ships which

A. I am not sure how to answer that one. I have seen

the Magnavox commercials on TV, if you call that

seeing a game. I haven't seen any in real life, though can using a cathode ray tube?

Q. So, other than seeing games perhaps played on a

commercial television set during a broadcast,

A. you haven't seen any game other than pong or ping

pong or Space War?

A. No. Department had business with him quite some

Q. And that is not fixed with respect to time, that is

any time? equipment design.

- A. Not of that nature that you couldn't play with a teletype.
- Q. Well, have you seen some games played using a cathode ray tube display that you could play using a teletype? What did your department have with?
- A. Yes, Baer?
- Q. And was that simply a matter of the appearance on the display of what would have appeared on a typewritten sheet? That was basic, essentially?
- A. Yes, very essentially. In the course of five years,
- Q. So was it then in the nature of writing rather than generation of images such as Space ships which moved? Along with TV games?
- A. Yes.
- Q. Do those then include all the games that you ever have seen using a cathode ray tube?
- A. That is all I can recall.
- Q. Are you acquainted with Mr. Ralph Baer?
- A. Yes, I know him.
- Q. How do you know Mr. Baer?
- A. My department had business with him quite some time back. I believe at that time he was chief engineer of equipment design.

- Q. When you say our department, what department were you speaking of? MR. ANDERSON: You are
- A. I am not sure, but I think it was when I was working for Mr. Richmond. MR. ANDERSON: Yes.
- Q. And what business did your department have with Mr. Baer? MR. ANDERSON: We were using some of the services of one of his functional groups, as I recall. At Sanders two or
- Q. Do you recall when that was more specifically? MR. ANDERSON: Not very accurately. In the order of five years, maybe. Acquainted with Mr. William Harrison?
- Q. Did you have anything to do with Mr. Baer in connection with TV games? MR. ANDERSON: William Harrison?
- A. No. Name sounds familiar, but I don't know him. I
- Q. Did you ever discuss TV games with Mr. Baer?
- A. No, I haven't. He questions about your knowledge of
- Q. Have you ever discussed Space War with Mr. Baer?
- A. No, I haven't. I know of no games that you
- Q. Have you discussed Space War with anyone at that Sanders other than the five persons, more or less, that you played the game with at Bedford?

MR. ANDERSON: And, counsel, Mr. Seligman and Mr. Etlinger and me?

MR. WELSH: Yes.

MR. ANDERSON: You are ~~writing~~  
excluding them?

MR. WELSH: Yes.

THE WITNESS: I can't recall  
any specific occasion.

Q. Was the first time that you discussed Space War  
with the Patent Department here at Sanders two or  
three months ago when you provided these documents?

A. Yes.

Q. Are you acquainted with Mr. William Rusch?

A. I have heard the name; I don't know the person.

Q. Are you acquainted with Mr. William Harrison?

A. The name sounds familiar, but I don't know him. I  
can't recall him.

Q. When I asked the questions about your knowledge of  
any games played on cathode ray tubes, were you  
restricting your answers to games that you  
observed at Sanders or did you include games that  
you observed anywhere?

A. Games anywhere. I have not observed any at  
Sanders other than Space War.

Q. And that was only at the Bedford plant?

A. That is correct.

Q. Now, when you prepared MR. WELSH: I have no more questions on direct examination. the punched tape

of Space War? (Interrogatories by Mr. Anderson.)

Q. Mr. Green, I think you testified that, to the best of your knowledge, the tape that is before you as Exhibit 69, the legend Space War 3.1? Exhibit 69 is a copy that you prepared?

A. Yes, it is.

Q. Was that on the punched tape that you were copying, Now, is there any way that you can specifically identify this tape as being the one that you

A. That information was on the tape, I don't know if prepared?

A. It was punched in that particular form or not. Only by the means of my handwriting on the front fold. Do you know if you manually injected the information

Q. so that the tape, Exhibit 69, was punched to include That is your handwriting in black on the front fold the words "Space War 3.1" or was it on the tape in of Exhibit 69, is it?

A. The black and I think also - I am not sure about I incorporated the white punching. the red. Possibly the red.

Q. You did that manually?

Q. What is the red, if you know?

A. It is a repeat of this. This looks like it is a poor "J," that doesn't look like my kind of "J," so I don't ~~ever~~ <sup>especially</sup> recall, but to include the I am not sure on it.

Q. After all recording, I am quite confident that I must Did you make more than one punched tape of Space War? Well, I still of that data in it.

A. Not to my recollection. ~~face of copying, you were~~  
Q. Now, when you prepared the punched tape of Space War, did you prepare it from another punched tape of Space War? ~~as, that is correct.~~

A. Yes, I did. ~~I'll now specifically indicate the holes~~

Q. And do you see at the beginning of the tape,

A. Exhibit 69, the legend Space War 3.1?

A. Yes. ~~makes you sure of that?" "Well, I am a fact~~

Q. Was that on the punched tape that you were copying, do you know? tape.

A. That information was on the tape, I don't know if it was punched in that particular form or not.

Q. Do you know if you manually injected the information

A. so that the tape, Exhibit 69, was punched to include the words "Space War 3.1" or was it on the tape in some way?

A. I incorporated the visible punching.

Q. You did that personally?

A. Yes.

Q. Do you recall doing that? ~~it's not important~~

A. I don't specifically recall, but to include the date of copying, I am quite confident that I must have put all of that data in it. ~~you made Exhibit 69~~

Q. And when you said the date of copying, you were referring to the punched holes after the punched holes Space War 3.1? I don't know. I did not leave.

A. Which is 9 Feb, '68, that is correct.

Q. Do you recall now specifically injecting the holes that state 9 Feb, '68?

A. I don't recall, but I must have.

Q. What makes you sure of that?

A. I am sure that the copy of 9 Feb, '68, was not on

Q. the original tape. Do you now recall if the

Q. Do you specifically recall that the copy that you had in your possession did not have the "copy 9 Feb, '68," that you copied?

A. Try that again. MR. WELSH: Counsel, I think

he answered that specific question. MR. ANDERSON: Read it back.

MR. ANDERSON: No, he has no recollection? (Whereupon, the previous

question was read back by the reporter.)

THE WITNESS: If I understand the question, no record to be ambiguous.

Q. You do not recall for certain whether the copy that you had in your possession when you made Exhibit 69

Q. Had this legend, "copy 9 Feb, '68," on it or not?

A. No, I did not examine the tape before giving it to Mr. Seligman, "so I don't know." I did not leaf through it to know what was on it. I used to make

Q. Now, What you are saying is that you did not leaf through Exhibit 69 before you handed it to

A. Mr. Seligman? my reason at the present time to believe

A. That is correct, and I had not seen the tape for several years, it was in my file.

Q. Now, my question is, Do you now recall if the

Q. copy that you used, the tape that you used to make Exhibit 69, did or did not have punched into it

A. the legend, "copy 9 Feb, '68"?

Q. None were prepared, MR. WELSH: Counsel, I think

A. he answered that specific question no.

Q. I place before you MR. ANDERSON: No, he has no recollection? recollection, have you ever seen that specific tape before? MR. WELSH: I believe that is correct. be satisfied.

Q. I open up the first MR. ANDERSON: I am not sure.

I don't want the record to be ambiguous. i.e., copy

Q. Do you understand my question now? prepared,

A. I don't recall. prepared from your tape, Exhibit no.

- Q. You don't recall it was.
- A. No, you have any belief as to the reason that the
- Q. So that legend, "copy 9 Feb, '68," may have been in punched form on the tape that you used to make Exhibit 69? That, to the best of your knowledge, you
- A. That is possible.
- Q. Do you have any reason at the present time to believe that that is not a fact? That that legend was on the tape which you copied? Why that would not
- A. No, true, that that date was on the tape that you
- Q. Do you know whether any copies were ever prepared from Exhibit 69?
- A. Not to my knowledge. Sanders' Deposition Exhibit 3
- Q. None were prepared, to the best of your knowledge?
- A. No, one, to the best of your present recollection?
- Q. I place before you Sanders' Exhibit 5, to the
- A. best of your recollection, have you ever seen that
- Q. specific tape before? Writing on it as the writing
- A. I can't be sure. In general, I don't know.
- Q. I open up the first three folds and call to your
- A. attention the punched legend, "Space War 3.1, copy 9 Feb, '68," do you know if that was prepared, if there's any punched writing on that material?
- Q. if Exhibit 5 was prepared from your tape, Exhibit 69? I exhibit 3 and call to your attention the fact that

- A. I would doubt that it was. copy 9 Feb, '68," appears
- Q. Do you have any belief as to the reason that the same date, "copy 9 Feb, '68," appears both on your tape, Exhibit 69, and on the tape, Sanders' Exhibit 5, that, to the best of your knowledge, you have never seen before? All to believe that
- A. I have no knowledge, I can only guess that it was on the original tape that I copied.
- Q. And do you know of any reason why that would not be true, that that date was on the tape that you originally copied?
- A. No. MR. WELSH: I have some more
- Q. I place before you Sanders' Deposition Exhibit 3 which is a paper tape; have you ever seen that before, to the best of your present recollection?
- Q. That particular physical exhibit?
- A. No. I am not familiar with it, I don't know.
- Q. Do you recognize the writing on it as the writing of any particular person?
- A. No, I don't.
- Q. I call your attention to the first three folds that have any punched marks on them or Sanders' Exhibit 3 and call to your attention the fact that

- Q. the legend, "Space War 3.1 copy 19 Feb, '68," appears  
A. on those three folds. Do you have any knowledge  
Q. as to the source from which that punched information  
was placed on Exhibit 3? it of the PDP-10?  
A. No, I haven't.  
Q. Do you have any reason at all to believe that  
A. Exhibit 3 was prepared from the copy that - the  
tape that you produced, Exhibit 69?  
A. No, I do not. MINTED WITH A MR. TAD MAIRSON?  
A. Yes, I am. MR. ANDERSON: No further  
cross-examination. Do you become acquainted with him?  
A. While working for Mr. WELSH: I have some more  
questions. Do you become acquainted with Mr. Mairson?  
A. Mr. Mairson was also working for Mr. Richmond in  
(Interrogatories by Mr. Welsh.) that department.  
Q. Are you acquainted with John Sauter?  
A. Yes, I am. I can't recall the precise name of it, I think it  
Q. How are you acquainted with Mr. Sauter?  
A. He was our resident PDP-10 expert from, I believe,  
A. shortly after they acquired the PDP-10 until about  
the end of the year. (Iield, I believe.)  
Q. Did you have any idea MR. ANDERSON: Of what year?  
A. I don't recall any. THE WITNESS: '75 or early '76.

- Q. When did they acquire the PDP-10?
- A. I don't recall. Early '70, I think. - Mairson
- Q. Did you ever have any dealings with Mr. Sauter in his capacity as the expert of the PDP-10?
- A. I asked him a number of questions about the various system aspects of the PDP-10. That completes
- Q. Did you ever discuss Space War with Mr. Sauter?
- A. No, I didn't.
- Q. Are you acquainted with a Mr. Ted Mairson? to ask
- A. Yes, I am.
- Q. When did you first become acquainted with him?
- A. While working for Mr. Richmond.
- Q. How did you become acquainted with Mr. Mairson?
- A. Mr. Mairson was also working for Mr. Richmond in heading up a different group in that department.
- Q. What group did he head up? They seem necessary and
- A. I don't recall the precise name of it, I think it had something to do with analysis.
- Q. Did he work with computers? TNESS: Yes.
- A. I have no personal knowledge of that. He is knowledgeable in the field, I do believe.
- Q. Did you have any direct dealings with him?
- A. I don't recall any. There may have been some

incidental ones.

Q. Did you ever discuss Space War with Mr. Mairson?

A. I would doubt that very much.

Q. You don't have any recollection of that?

A. I don't recall ever discussing it with him.

COURT OF Pennsylvania MR. WELSH: That completes

my additional direct examination.

day of July 20th MR. ANDERSON: Mr. Wright, do you have any questions that you would like to ask this witness?

MR. WRIGHT: No, I don't.

MR. ANDERSON: Mr. Green, the parties have agreed that if it is agreeable to the various witnesses, that each witness will read the transcript of his testimony and the witness will make any corrections that they deem necessary and will sign it before any notary public, is that agreeable to you?

THE WITNESS: Yes.

MR. ANDERSON: Is that acceptable to you, Mr. Welsh?

MR. WELSH: Yes.

MR. ANDERSON: Thank you

I am very much, Mr. Green.

COUNTY OF HILLSBOROUGH }  
STATE OF NEW HAMPSHIRE }  
}

I, Gordon R Green, a Notary  
Public within and for the said County of Hillsborough, New Hampshire,  
Deponent, do hereby certify

THE STATE OF NEW HAMPSHIRE, authorized to administer oaths,  
COUNTY OF Hillsborough, ss.

that I Subscribed and sworn to before me this 28th  
day of May 1976.

in the office of Seaver Associates, Inc., Headquarters, Split Rock Road, Nashua, New Hampshire,  
Gordon Richard Green, a witness called by Seaver Associates, Inc.

of the defendant in the above Justice of the Peace and/or  
Marilyn E. Trapalis  
Notary Public

In the United States District Court for the Southern District of New York and I  
My Commission Expires March 19, 1980

for the Northern District of Illinois, Eastern Division,  
that the said witness was duly sworn to testify to the  
truth, the whole truth and nothing but the truth; that  
thereupon and while said witness was under oath, the  
above deposition was taken down by me in machine shorthand  
at the time and place herein stated and was thereupon  
dictated to me.

I further certify that I am not  
interested in the outcome of said action.